PREDICTIVE MODELS OF HEALTH-RELATED QUALITY OF LIFE UTILIZING PATIENT REPORTED OUTCOMES DATA FROM A POPULATION WITH A HISTORY OF ACUTE CORONARY SYNDROME

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OBJECTIVE: To model the predictive relationships of self-reported patient-specific, independent predictor variables on dependent health-related quality of life measures (HRQL) in an acute coronary syndrome (ACS) population. METHODS: All ACS patients discharged from a university affiliated hospital during a 3-year period were mailed a questionnaire that included two short general HRQL measures, the SF-8 and EQ-5D. Independent variables included cardiac functional status [Duke Activity Status Index (DASI)], symptom count (Symptom Distress Checklist), comorbidity index (Charlson self-administered), patient-perceived cardiac disease severity, medication count, compliance score, patient demographics, and ACS type [unstable angina (UA) or myocardial infarction (MI)]. Three separate stepwise-elimination (p < 0.05) linear regression models determined the combined predictive ability of independent variables on the PCS-8, the MCS-8, and the EQ-5D General Health Visual Analog Scale (VAS). RESULTS: To date, 414 of 1230 patients (34%) have responded. The mean (±s.d.) age was 65.7(±11.3) years; 67.7% male; 94.0% Caucasian; 62.1% history of MI; and 22.9% reported severe or worse cardiac disease severity. Respondents reported the following mean (±s.d.) responses: DASI 20.5(±8.1); comorbidity index 2.5(±1.9); number of medications 8.4(±4.6); compliance score 4.8(±0.5); number of symptoms 7.8(±4.9); PCS-8 53.7(±10.5); MCS-8 49.5(±9.5); and VAS 73.6(±20.5). The final PCS model had an r-square of 0.51 and contained the comorbidity index, number of symptoms, age, gender, perceived cardiac severity, household income, and type of ASC. The final MCS-8 model had an r-square of 0.36 and contained number of symptoms, perceived cardiac severity, and education level. The final VAS model had an r-square of 0.49 and contained comorbidity index, number of symptoms, perceived cardiac severity, and household income level. CONCLUSIONS: Patient self-reported measures of disease, cardiac functional status, symptomology, and medication utilization formed highly predictive models of HRQL. Greater numbers of reported symptoms and higher patient-perceived cardiac severity were associated with lower HRQL in all three models.

WHICH STATIN? A MULTICRITERIA DECISION ANALYSIS

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OBJECTIVE: The five statins currently available in the US (atorvastatin [A], pravastatin [P], simvastatin [S], fluvastatin [F] and lovastatin [L]) differ in terms of their abilities to lower LDL-C, the need to adjust dosing for decreased renal function, potential for drug-drug interactions, cost, recommended hepatic function monitoring schedule, and level of proven effectiveness. The implications of these differences on the clinical use of statins have been largely unexplored. The purpose of this study was to examine the effects of these intra-class differences on clinical decision making using multicriteria decision analysis. METHODS: A multicriteria decision analysis using the Analytic Hierarchy Process (AHP) was performed from the practitioner’s perspective. The goal was defined as “Choose the best statin”. Decision criteria were based on the differences mentioned above. Costs were included in the analysis both as internet drug store prices (scenario 1) and in terms of patient co-pays for 3 current three-tiered managed care formularies in Rochester, NY (scenarios 2, 3, & 4). Data comparing the statins’ performance on the other criteria were obtained from the literature. RESULTS: Statin priority scores, which measure the relative rankings of the alternatives’ abilities to meet the all decision criteria (higher scores are better), for the 4 scenarios are: Scenario 1: L = 0.214, F = 0.209, P = 0.200, S = 0.190, A = 0.187; Scenario 2: P = 0.209, L = 0.208, S = 0.205, F = 0.192, A = 0.188; Scenario 3: P = 0.213, L = 0.208, S = 0.200, A = 0.192, F = 0.187; Scenario 4: P = 0.209, L = 0.208, S = 0.205, A = 0.192, F = 0.187. In addition to cost, relative priority scores in all scenarios were affected by differences in the importance assigned to ability to lower LDL-C, ease of prescribing safely, and proven effectiveness. CONCLUSION: The relative importance of differences among statins has a significant impact on optimal clinical use of these drugs. These results suggest that practitioners should be aware of these differences and incorporate them in clinical decisions regarding statin prescriptions.